

REMARKS/ARGUMENTS

Claims 1-43 are pending in this application. By this Amendment, claims 1, 6, 14 and 23 are amended, and claims 35-43 are added. Support for the claims can be found throughout the specification, including the original claims and the drawings. Withdrawal of the rejections in view of the above amendments and the following remarks is respectfully requested.

I. Rejections Under 35 U.S.C. §102(b)

The Office Action rejects claims 6-8, 10-13, 31 and 32 under 35 U.S.C. §102(b) over Korean Patent No. 1994-0006388 to Yoo. The rejection is respectfully traversed.

Independent claim 6 is directed to a filter for a washing machine, including a shaft extending from a bottom of a cap, and an extension comprising a continuous solid walled structure extending from a distal end of the shaft, wherein the extension is disposed to confront the opening so as to filter particles in water passing through the filter case, the extension having a protrusion protruding from a side of the extension opposite to the cap. Yoo neither discloses nor suggests at least such features, or the claimed combination of features.

Yoo discloses in Figures 5-6 (referred to in the Office Action) a filter 11 for a drainage pump in a washing machine. The filter 11 includes a cap 12, a first disc 17 fitted to the cap 12 by a first connecting bar 13 so as to form a back side of the cap 12, a second disc 19 connected to the first disc 17 by a second connecting bar 18, and a third disc 20 connected to the second disc 19 by a third connecting bar 21. Particle laden water passes through gaps between the second disc 19 and an inner surface of a case 26, while particles in the water are forced through a

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center opening in the second disc 19. These particles are captured by the third disc 20, and only water flows out through an outlet 25.

It appears the Examiner has drawn a comparison between the cap 12, second connecting bar 18, second disc 19 and third disc 20 disclosed by Yoo, and the cap, shaft, extension, and protrusion, respectively, recited in independent claim 6. If such a comparison is to be made, then it is respectfully submitted that Yoo neither discloses nor suggests an extension as recited in independent claim 6. More specifically, the second disc 19 disclosed by Yoo has a hole in its center through which some of the particles travel. Contrary to that which is asserted in the Office Action, Applicant maintains the previously stated position that, because of this hole, the second disc 19 is not solid walled, as is the extension recited in independent claim 6. Further, Applicant respectfully disagrees with the assertion in the Office Action that the third disc 20 (compared in the Office Action to the recited protrusion) extends from the second disc 19 via the third connecting bar 21.

However, even if such improper comparisons are drawn, Yoo still neither discloses nor suggests an extension as recited in independent claim 6. More specifically, the hole in the center of the second disc 19 represents a discontinuity in the structure of the second disc 19. Yoo neither discloses nor suggests that the second disc 19 comprises a continuous solid walled structure, as does the extension recited in independent claim 6.

For at least these reasons, it is respectfully submitted that independent claim 6 is not anticipated by Yoo, and thus the rejection of independent claim 6 under 35 U.S.C. §102(b) over

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Yoo should be withdrawn. Dependent claims 7, 8, 10-13, 31 and 32 are allowable at least for the reasons set forth above with respect to independent claim 6, from which they depend, as well as for their added features.

The Office Action rejects claims 1-13 and 22-32 under 35 U.S.C. §102(b) over German Patent No. 39 22 629 to Beier et al. (hereinafter "Beier"). The rejection is respectfully traversed.

Independent claim 1 is directed to a filter for a washing machine, including a funnel shaped extension extending from an end of the shaft, the extension disposed to confront the opening so as to filter particles from water flowing between the extension and the filter case, the extension having a protrusion protruding from a side of the extension opposite to the cap, wherein the protrusion extends away from the cap and has a diameter that is smaller than a largest diameter portion of the extension. The features of independent claim 6 have been set forth above. Independent claim 22 recites similar features in varying scope. Beier neither discloses nor suggests at least such features, let alone the respective claimed combinations of features.

Beier discloses a filter assembly for a washing machine in Figure 1 (referred to in the Office Action). The filter assembly includes a filter cartridge 6 inserted into a filter chamber 1. A labyrinth filter 10 is positioned between an inlet 4 and a pump 3. In addition, a mesh filter 13 is mounted on the exterior of a cylindrical surface 11 that extends from a cap 20. The mesh filter 13 can be mounted at different positions along the cylindrical surface 11, as shown in Figures 2 and 3. Both positions are shown in dotted lines in Figure 1.

When the mesh filter 13 is mounted back near the cap 20, as shown in Figure 3, water entering the inlet 4 completely bypasses the mesh filter 13. The water passes from the inlet 4, through the labyrinth filter 10, and then into the pump 3 and ultimately out the outlet 5. When the filter is in this configuration, only large particles in the water are trapped by the labyrinth filter 10.

When the mesh filter 13 is mounted adjacent the labyrinth filter 10, as shown in Figure 2, all water passing in through the inlet 4 must pass through the mesh filter 13. Thus, the mesh filter 13 would stop both large and small particles.

The Office Action also asserts that a slanted portion of the labyrinth filter 10 is comparable to the funnel shaped extension recited in claim 1, and that the horizontal portion extending from the slanted portion is comparable to the recited protrusion. While the cross-sectional view in Figures 1-3 of Beier make the general outline of the labyrinth filter 10 appear funnel shaped or conical, in fact, the labyrinth filter 10 has a considerably different shape. The labyrinth filter 10 is designed, in combination with the end of the filter cartridge 6, to force water passing through the filter to change directions twice. Water entering the filter via the inlet 4 will pass along the exterior cylindrical surface 11 of the filter cartridge 6 towards the labyrinth filter 10. The water will pass between the cylindrical surface 11 and intake to the labyrinth filter 10 until it hits the rear wall of the labyrinth filter 10. At this point, the water is forced to reverse direction so that it flows inward and back towards the left, as shown in the figures. The water will then encounter the dish-shaped center of the filter cartridge 6, and it will be forced to again

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reverse direction so that it passes to the right, out through the aperture 9 and into the pump.

The impeller 3 of the pump will then eject the water out of the pump through the outlet 5.

The complex folded shape of the labyrinth filter 10 is not funnel or conical shaped. Instead of forcing the water to flow along a conical or funnel shaped surface, the labyrinth filter 10 is specifically designed to force the water to reverse directions twice before exiting the filter.

As noted above, claim 1 requires a funnel shaped extension extending from an end of a shaft. As explained above, Beier's labyrinth filter 10 is not a funnel shaped extension. Moreover, claim 1 required a protrusion protruding from a side of the extension opposite to the cap, wherein the protrusion extends away from the cap. To the extent the cylindrical portion 9 of the labyrinth filter 10 is compared to the claimed protrusion, Applicants note that the cylindrical portion 9 protrudes toward the cap 20, and not away from the cap 20.

Additionally, the slanted portion of the labyrinth filter 10 referred to in the Office Action does not appear to actually act as a filter for any of the water flowing through Beier's assembly. Thus, even if this slanted portion of the labyrinth filter 10 is improperly compared to the claimed extension, Beier still neither discloses nor suggests that this slanted portion filters particles from water flowing between this slanted portion and the casing in which Beier's assembly is housed. Thus, Beier neither discloses nor suggests an extension that filters particles from water flowing between the extension and a filter case as recited in independent claim 1.

For all these reasons, it is respectfully submitted that claim 1 is allowable over Beier.

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Claim 6 recites features similar to claim 1 discussed above, but also recites that the extension comprises a continuous solid walled structure. As explained above, the labyrinth filter 10 of Beier is deliberately constructed so that it is not a continuous solid walled structure. Instead, the labyrinth filter 10 includes apertures that allow water to pass therethrough. For these additional reasons, it is respectfully submitted that claim 6 is allowable over Beier.

Claim 22 includes features similar to claims 1 and 6, and is also allowable over Beier for all the reasons discussed above. For example, as set forth above Beier neither discloses nor suggests the claimed extension. Further, even if the slanted portion of the filter 10 is considered an extension, it is not a conical shaped solid surface having a diameter that increases in a direction extending away from a cap, nor is a largest diameter portion thereof positioned immediately adjacent an opening in a case, as recited in independent claim 22.

Accordingly, it is respectfully submitted that independent claims 1, 6 and 22 are not anticipated by Beier, and thus the rejection of independent claims 1, 6 and 22 under 35 U.S.C. §102(b) over Beier should be withdrawn. Dependent claims 2-5, 7-13 and 23-32 are allowable at least for the reasons set forth above with respect to independent claims 1, 6 and 22, from which they respectively depend, as well as for their added features.

II. Rejections Under 35 U.S.C. §103(a)

The Office Action rejects claims 14-16, 18-21 and 33 under 35 U.S.C. §103(a) over Yoo in view of U.S. Patent No. 6,167,733 to Lee. The rejection is respectfully traversed.

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Independent claim 14 is directed to a washing machine that includes a filter loaded in a filter case. The filter includes a cap fitted to the filter case, a shaft extending from a bottom of the cap, and an extension comprising a continuous solid walled structure extending from a distal end of the shaft, the extension disposed to confront the opening to filter particles in water passing through the filter case, the extension having a protrusion protruding from a side of the extension opposite to the cap. As acknowledged in the Office Action and as set forth above, Yoo neither discloses nor suggests such features, or the claimed combination of features.

Further, Lee is merely cited as allegedly teaching a washing machine with a cabinet, a tub, a drum and a filter assembly. Thus, Lee fails to overcome the deficiencies of Yoo with respect to this rejection.

Accordingly, it is respectfully submitted that the rejection of independent claim 14 is allowable over the applied combination and thus the rejection of independent claim 14 under 35 U.S.C. §103(a) over Yoo and Lee should be withdrawn. Dependent claims 15, 16, 18-21 and 33 are allowable at least for the reasons set forth above with respect to independent claim 14, from which they depend, as well as for their added features.

The Office Action rejects claims 14, 17, 33 and 34 under 35 U.S.C. §103(a) over Beier in view of Lee. The rejection is respectfully traversed.

The features of independent claim 14 are set forth above. As set forth above, Beier neither discloses nor suggests at least such features, and Lee fails to overcome the deficiencies of Beier. Accordingly, it is respectfully submitted that independent claim 14 is allowable over the

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applied combination, and thus the rejection of independent claim 14 under 35 U.S.C. §103(a) over Beier and Lee should be withdrawn. Dependent claims 17, 33 and 34 are allowable at least for the reasons set forth above with respect to independent claim 14, from which they depend, as well as for their added features.

III. New Claims 35-43

New claims 35-43 are added to the application. It is respectfully submitted that new claims 35-43 meet the requirements of 35 U.S.C. §112, and are allowable at least for the reasons set forth above with respect to independent claims 1, 6 and 14, from which they respectively depend, as well as for their added features.

IV. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned, **Joanna K. Mason**, at the telephone number listed below.

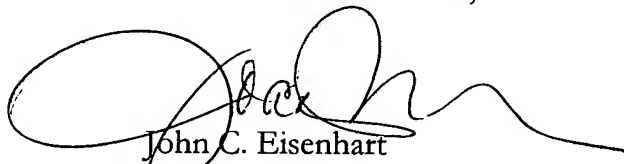
Serial No. **10/720,392**

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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Attachment:

Translation of Beier

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The invention concerns a washing machine or a wash dryer with a caustic solution pump unit and a filter cartridge arranged in the waste water way for separating foreign bodies from the detergent solution, which is accessible to case of heavy body from the exterior of the machine housing ago and with a labyrinth filter as and a mesh filter is designed as Flusenfilter.

In order to protect the Laugenpumpe of a laundry treatment machine against pollution and damage by foreign bodies, Flusenfilter or heavy body traps are used. During with case of heavy body of buttons, curtain roles of etc. , can with a Flusenfilter also finer foreign bodies are separated such as threads and/or. Flusen to be held back.

From the DE-GM 66 10 307 already a washing machine with a Laugenpumpe is well-known, with which in the waste water way before the pump case of clammy as case of heavy body is arranged.

Further it is z. B. from the DE-GM admits 19 29 516 to begin in the waste water way of washing machines Flusenfilter which is to prevent a pollution of the pump by Flusen and threads.

With the two o. g. Remarks are the users in each case either on separating Flusen or heavy bodies fixed. Regarding the foreign body separation however in the circle of users different views will represent. Some users would like to catch if possible all Flusen in a filter to avoid over a pollution of the waste water ways downstream and accept thereby a regular cleaning of a Flusenfilters. Other users is too complex regular cleaning of a Flusenfilters, it want foreign bodies to only separate, which can entail a destruction of the pump, and take thus in purchase that Flusen and threads arrive into the sewage system. It is unfavorable that for the different user desires always at least two remarks must be held ready by filter cartridges.

From the DE-GM 19 89 016 is well-known case of clammy for laundry treatment equipment equipped with a Laugenpumpe. This case of clammy consists of a labyrinth filter and a mesh filter. The filter class the case of clammy is not adjustable.

The invention is the basis the task to arrange with a washing machine or a wash dryer of the initially made kind the filter class adjustable.

This task is solved according to invention by the characteristics of the requirement 1. Favourable training of the invention result from the requirements 2-10.

The users an individual choice of the filter class in particular it makes the advantages possible couches therein that for the different user desires only one filter cartridge is necessary, attainable with the invention.

A remark example of the invention is represented and in the following is more near described in the design.

Show:

▲ top Fig. 1 the filter chamber (1) of a caustic solution pump unit in the side view on average with representation of two variants of the reference rings (12) in a sectional view,

Fig. 2 the filter cartridge (6) as Flusenfilter,

Fig. 3 the filter cartridge (6) as case of heavy body,

Fig. 4 mesh filter (13) with film hinge (16) and rest mechanism (17, 18) in opened unfold position,

Fig. 5 mesh filter (13).

In the Fig. 1 is designated the filter chamber of a caustic solution pump unit with 1. Following the filter chamber (1) the pump chamber (2) with the pump wing (3), stored therein, is arranged. The inlet connecting piece (4) is assigned to the filter chamber (1) and the pump chamber (2) the pressure connecting piece (5). The filter cartridge (6) can be taken by the exterior of the machine housing (7) ago by an opening in the housing to cleaning purposes out of the filter chamber (1).

The filter cartridge (6) is connected with a not represented cover for the filter chamber (1).

At its pump-wing-lateral beginning the filter cartridge (6) carries a friction disk (8) with the intake (9), those with the cleaning exactly, as the cover as well as the filter cartridge (6) is taken. Thus the pump wing (3) is freely accessible and can be waited. The friction disk (8) serves in actually well-known way for the flowtechnical separation from pumping and filter chamber (2, 1). The filter cartridge (6) is provided at its pump-wing-lateral beginning with a kegellg trained labyrinth filter (10), which of heavy bodies, as can not be happened to buttons etc.. On its cylindrical part (11) the filter cartridge (6) with circulating reference rings (12) is trained. The reference rings (12) can be opposite the Mantellinie cylindrical of the part (11) increased (variant 1) or sunk (variant 2) arranged.

To the cylindrical part (11) of the filter cartridge (6) that is attached mesh filter (13). Mesh filter (13) is as clam-shell plastic-squirt-hurries trained. The two half shells (14, 15) are einstückig connected at first junction point by a film hinge (16) and when assembling to the cylindrical part (11) of the filter cartridge (6) are attached, whereby the two free half shell ends are interconnected by a rest mechanism (17, 18). Fig. that shows 4 mesh filter (13) in opened unfold position, whereby the connection of the two half shells (14, 15) is recognizable by the film hinge (16). At the two free ends of the half shells (14, 15) the rest mechanism (17, 18) is represented. With 17 the admission for the rest hook (18) is designated.

Fig. that shows 5 mesh filter (13) in more verrasteter and/or. folded up position.

The inside diameter of the mesh filter (13), which on the cylindrical part (11) the filter cartridge (6) is stored, exhibits photograph rings (19) for the reference rings (12). Mesh filter (13) can be positioned over the photograph and reference rings (19, 12) in a desired position on the cylindrical part (11) of the filter cartridge (6). Depending upon position of the mesh filter (13) on the cylindrical part (11) a rough to fine foreign body separation is reached. In as in Fig. 2 position shown a separation of Flusen becomes and/or. Threads from the detergent solution reaches. Mesh filter (13) is arranged in this position in direct proximity of the inlet connecting piece (4), and the detergent solution is promoted completely by means of mesh filter (13) to the pump. The filter cartridge (6) is thus operational as Flusenfilter.

In as in the Fig. 3 position shown is that mesh filter (13) on the cylindrical part (11) completely pushed back up to the housing-lateral beginning (20). The detergent solution cannot pass that mesh filter (13), so that only the heavy bodies in the labyrinth filter (10) are separated. In this position the filter cartridge (6) is used as case of heavy body.

Depending upon number of the marking and photograph rings (12, 19) at the cylindrical part (11) and mesh filter (13) are adjustable one to several intermediate stages of the filtering (middle filter class attitudes), so that the filter class is individually according to the desires of the users adjustable. For an attitude of the filter class, roughly, means or finely, simply mesh filter (13) is positioned on the appropriate reference ring (12) at the cylindrical part (11) of the filter cartridge (6).